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THE EFFECT OF TICK BITES ON MAN

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The local and constitutional effects which tick bites have on human beings is a subject which is still in the experimental stage, and I have been unable to find it discussed at any length in any of the textbooks. Osler merely mentions the fact. The only literature available is to be found in papers published in the scientific magazines.

I have had several cases which I attribute to the bites of ticks. These cases present two sets of symptoms, that is, local and constitutional. Where the local symptoms appear the tick has been forcibly removed, and the parts which it buries into its host left behind. The constitutional symptoms appear when the tick is allowed to remain on the host for some time. To illustrate the local symptoms I will describe two cases.

CASE 1.—M. M., aged 34. One night in May, 1913, on retiring, he felt an irritation along the right tibia. He rubbed the leg vigorously with the hand. Next morning the pruritus was very marked and a red spot appeared on the leg. The body of the tick was found on the floor. That day the leg began to swell and continued to do so until it was nearly twice its normal size. An abscess developed at the point where the tick's head was embedded. Hot poultices were applied for a week, then an incision made. The skin over the abscess was very tough. A creamy looking pus escaped. In about three days a hard dark colored mass came away. This was almost of a rubbery nature, and left an ulcer which extended nearly to the bone. I treated this as an ordinary ulcer for a week, but it showed no signs of healing. By that time the ulcer had hard indurated edges, giving it a "punched-out" appearance. There was a thin watery exudate coming from it. The only thing the patient complained about was the intense itching. In two months the ulcer was covered with skin. Each spring an ulcer has formed at the same place, which takes from two weeks to two months to heal. The leg itches almost constantly, at times becoming almost unbearable.

CASE 2.—Female, age 9, June, 1915. The tick was found on the mastoid bone. Her father removed it by force. Next morning the child complained of itching, and a red spot appeared. In two days the parts were much swollen and tender, with a raised spot where the head was imbedded. Applied hot poultices for four days and incised. The skin was very tough and very little pus escaped. The next day pus came from the ear as well as by the incision. On the third day after the incision was made, a dark, rubbery mass came away, leaving a "punched-out" ulcer. The ulcer has not healed as yet, Aug. 15, 1915, the pruritus being so severe that the child's hands have to be tied at night.

To illustrate the constitutional symptoms I will describe the only case I have had.

CASE 1.—D. W. Female, aged 11. May, 1915. Retired May 9, in ordinary health. When she got up the next morning her legs gave way and she fell. She walked about that day with no other symptom than falling, if she turned

or moved quickly. She could execute any movement if done slowly. The next day she could not walk and her arms were involved. Paralysis gradually extended until all the muscles were involved, leaving the child helpless. The pupils gradually dilated and lost their power of reacting to light. The tendons were at first exaggerated but later became lost. For the first four days the patient was very excitable. The muscles twitched so as to give her choreic movements; afterward she became somewhat duller but still retained most of her faculties. The involuntary muscles were the next to become affected, so that there was incontinence of the urine and feces. The breathing which was at first rapid became "choky," there being a peculiar rattling sound at each effort to breathe. She complained of a lump in her throat. If given liquids they returned by the nose. Her speech was affected so that she could hardly articulate. The tongue became swollen. The heart became very rapid, being above 120 per minute. The temperature at first rose 1 degree then dropped to 3 degrees below normal. Urine analysis negative. Sensory nerves normal. On the seventh day after symptoms appeared I removed a tick from near the crown of the head. Recovery was very rapid, so that on the third day she was able to walk up the street. In this case I had practically given up all hope of recovery. When the tick was removed I stopped all medicine and treatment. The child made a complete recovery.

I was fortunate enough to have the tick in this case identified as *Dermacentor venustus*. Whether it is *Dermacentor venustus* which causes the local effects or *Dermacentor albipictus*, which is also quite plentiful on horses in this district, I am unable to state. Princeton has an altitude of 2,000 feet and ticks are most abundant and active during the spring months and early summer; possibly they may be found higher up in the mountains at a later date. The case of "tick paralysis" I have just described is the first one of its kind that I have seen in the Princeton district. A number of cases have been reported from other parts of British Columbia, the nearest being in the Similkameen Valley some miles distant.

Dr. S. Hadwen examined the tick which was removed from the case of "tick paralysis," and determined it as *Dermacentor venustus*, a half-gorged female. He tells me that he has never seen any harmful effects from the bites of *D. albipictus* in animals, but that the local after-effects from the bites of *D. venustus* are often severe. According to Hadwen, the constitutional effects in animals following the prolonged attachment of *D. venustus* are identical to those I have just described.